

Research on computational analysis methods for ice accretion

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● Abstract

research and development of icing simulation tools for CbA

● Reasons and benefits of using JAXA Supercomputer System

Due to broadband time and spatial scales of ice accretation, huge computational resources and acceleration of computation by JSS are needed.

● Achievements of the Year

a preliminary code for complete multi-shot analysis was developed by implementing a mesh deformation method into the single-shot tool.

● Publications

N/A

● Usage of JSS

● Computational Information

Process Parallelization Methods	MPI
Thread Parallelization Methods	OpenMP
Number of Processes	16 - 96
Elapsed Time per Case	24 Hour(s)

● **JSS3 Resources Used**

Fraction of Usage in Total Resources*1(%): 0.25

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage*2(%)
TOKI-SORA	4,130,241.51	0.19
TOKI-ST	764,709.15	0.83
TOKI-GP	0.00	0.00
TOKI-XM	0.00	0.00
TOKI-LM	1.32	0.00
TOKI-TST	0.00	0.00
TOKI-TGP	0.00	0.00
TOKI-TLM	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage*2 (%)
/home	4.45	0.00
/data and /data2	6,076.22	0.04
/ssd	0.00	0.00

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage*2 (%)
J-SPACE	0.00	0.00

*1: Fraction of Usage in Total Resources: Weighted average of three resource types (Computing, File System, and Archiver).

*2: Fraction of Usage : Percentage of usage relative to each resource used in one year.

- **ISV Software Licenses Used**

ISV Software Licenses Resources		
	ISV Software Licenses Used (Hours)	Fraction of Usage ^{*2} (%)
ISV Software Licenses (Total)	93.13	0.04

*2: Fraction of Usage : Percentage of usage relative to each resource used in one year.